Observation of Upper Atmospheric and Ionospheric Radar in China

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In recent years, more than ten upper atmospheric and ionospheric radars have been set up in China under the support of Solar-Terrestrial Environment Research Network of Chinese Academy of Sciences (STERN) and Chinese Meridian Space Weather Monitoring Project (Meridian Project) etc. These radars have greatly improve capacity to observe upper atmosphere and ionosphere over China region. In this report, the radar facilities including MST radar, MF radar, Meteor radar, VHF ionospheric coherent scatter radar and ionospheric incoherent radar in China will be introduced. By using the meteor radar chain along 120^{O} E, the upper atmospheric winds and atmospheric waves such as diurnal and semidiurnal variation with latitude and height have been investigated. At the same time, the VHF ionospheric radars have been used to observe the ionospheric irregularities and their excitation sources in the low latitude of China. Recently, a new project Sanya incoherent scatter radar (SYISR) supported by National Science Foundation of China start to construct in Sanya, Hainan island of China (18.4ºN, 109.6ºE). SYISR is advanced modular phased array radar with solid transmitters and digital receivers. It will be the first low latitude phased array ISR in the world. The main aim of SYISR is to investigate low-latitude atmosphere-ionosphere-magnetosphere (AIM) coupling, fountain effects and equatorial ionospheric anomaly. Some more details about SYISR will be presented.